

Lab 2 - Trunking Across IOS Switches

Lab 2: Trunking across IOS switches

Lab exercise

Your task is to configure the network in Figure 13-2. All the router interfaces on the switch and router are in VLAN 2. You will need two switches running Cisco IOS; we have used two 2950 switches.

If you do not want to keep swapping between switches, then follow the entire config for one 2950 switch. We have broken it down into smaller chunks to make the various stages more understandable.

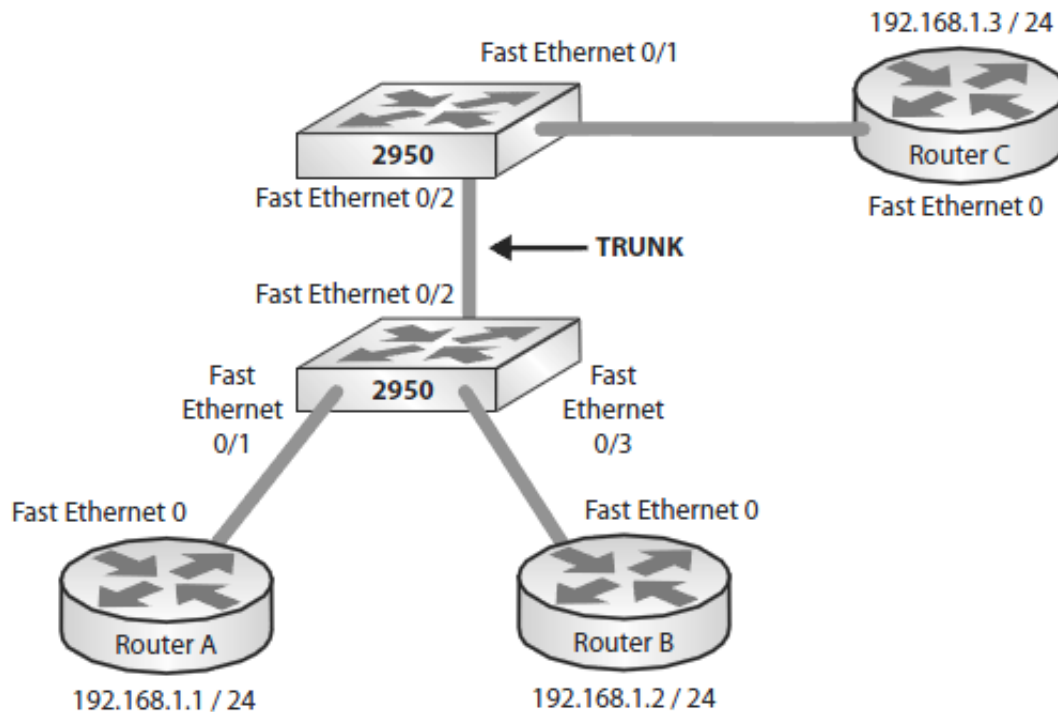


Figure 13-2: Trunking across switches

Purpose

Being able to trunk between switches is a necessary skill for a Cisco engineer.

Note: Do a "show run" on the switches to check which interfaces they have and which one you are plugged into. You can also go through the entire switch config in one go rather than in phases (as below) to save time.

Lab objectives

1. Configure the switch to use VLAN 2, name "Cisco".
2. Place two interfaces on the switch in VLAN 2 on the 2950 switch and one interface in VLAN 2 on the other 2950 switch.
3. Configure the routers' interfaces with the IP addresses as in Figure 13-2.
4. Ping across the LAN on VLAN 2.

Lab walk-through

1. To configure the IP address on the routers, do the following:

```
Router>enable
```

```
Router#
```

```
Router#configure terminal
```

```
Router(config)#hostname RouterA
```

```
RouterA(config)#interface fastethernet 0
```

```
RouterA(config-if)#ip address 192.168.1.1 255.255.255.0
```

```
RouterA(config-if)#no shut
```

```
RouterA(config-if)# ^Z
```

```
RouterA#
```

```
Router B:
```

```
Router>enable
```

```
Router#config t
```

```
Router(config)#hostname RouterB
```

```
RouterB(config)#interface fastethernet 0
```

```
RouterB(config-if)#ip address 192.168.1.2 255.255.255.0
```

```
RouterB(config-if)#no shut
```

```
RouterB(config-if)# ^Z
```

```
RouterB#
```

```
Router C:
```

```
Router>enable
```

```
Router#config t
```

```
Router(config)#hostname RouterC
```

```
RouterC(config)#interface fastethernet 0
```

```
RouterC(config-if)#ip address 192.168.1.3 255.255.255.0
```

```
RouterC(config-if)#no shut
```

```
RouterC(config-if)# ^Z
```

```
RouterC#
```

If you have plugged directly into the switch, you will be able to ping from router A to router B and router C. This is because they are all in VLAN 1, by default. If you have just booted up the switch, it may take a few moments for the database to be built.

```
RouterB#ping 192.168.1.1
```

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:

.....

Success rate is 0 percent (0/5) RouterB#ping 192.168.1.1

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:

..!!!

Success rate is 60 percent (3/5), round-trip min/avg/max = 4/4/4 ms

RouterB#ping 192.168.1.1

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/4 ms

RouterB#

2. Configure VLAN 2 on the IOS switches.

Switch>

Switch>enable

Switch#config t

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#hostname Top2950

Top2950(config)# ^Z

Top2950(config)#vlan 2

Top2950(config-vlan)#name Cisco

Top2950(config-vlan)# ^z

Now configure VLAN 2 on the bottom 2950:

Switch>

Switch>enable

Switch#config t

Enter configuration commands, one per line. End with CNTL/Z.

Switch(config)#hostname Bottom2950

Bottom2950(config)#vlan 2

Bottom2950(config-vlan)#name Cisco

Bottom2950(config-vlan)# ^z

3. Put the relevant ports in VLAN 2 on each switch.

Top2950#config t

Top2950(config)#interface fast 0/1

```
Top2950(config-if)#switchport access vlan 2
```

```
Top2950(config-vlan)# ^z
```

```
Top2950#
```

===

```
Bottom2950#config t
```

```
Bottom2950(config)#interface fast 0/1
```

```
Bottom2950(config-if)#switchport access vlan 2
```

```
Bottom2950(config-vlan)#int fast 0/3
```

```
Bottom2950(config-if)#switchport access vlan 2
```

```
Bottom2950(config-if)# ^z
```

```
Bottom2950#
```

4. Turn trunking on-on the interfaces between the switches.

```
Bottom2950(config-if)#interface fastethernet 0/2
```

```
Bottom2950(config-if)#switchport mode trunk
```

```
Bottom2950(config)#exit
```

```
Bottom2950#
```

```
Top2950(config-if)#interface fastethernet 0/2
```

```
Top2950(config-if)#switchport mode trunk
```

```
Top2950(config)#exit
```

```
Top2950#
```

5. Ping from router C to router A.

```
RouterC#ping 192.168.1.1
```

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:

.!!!! « **one ping fails due to the ARP lookup**

Success rate is 80 percent (4/5), round-trip min/avg/max = 4/4/4 ms

```
RouterC#ping 192.168.1.1
```

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 192.168.1.1, timeout is 2 seconds:

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 4/6/8 ms

RouterC#

Show runs

RouterA#show run

Building configuration...

Current configuration : 428 bytes

!

version 12.1

no service single-slot-reload-enable

service timestamps debug uptime

service timestamps log uptime

no service password-encryption

!

hostname RouterA

!

ip subnet-zero

!

interface fastethernet

ip address 192.168.1.1 255.255.255.0

!

interface Serial0

no ip address

shutdown

!

interface Serial1

no ip address

shutdown

!

ip classless

no ip http server

!

line con 0

```
line aux 0
line vty 0 4
!
end
```

```
RouterB#show run
```

```
Building configuration...
```

```
Current configuration : 428 bytes
```

```
!
version 12.1
no service single-slot-reload-enable
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname RouterB
!
ip subnet-zero
!
interface fastethernet
ip address 192.168.1.2 255.255.255.0
!
interface Serial0
no ip address
shutdown
!
interface Serial1
no ip address
shutdown
!
ip classless
no ip http server
```

```
!  
line con 0  
line aux 0  
line vty 0 4  
!  
end
```

```
RouterC#show run  
Building configuration...
```

Current configuration:

```
!  
version 12.0  
no service pad  
service timestamps debug uptime  
service timestamps log uptime  
no service password-encryption  
!  
hostname RouterC  
!  
ip subnet-zero  
!  
process-max-time 200  
!  
interface fastethernet0  
ip address 192.168.1.3 255.255.255.0  
no ip directed-broadcast  
!  
interface BRI0  
no ip address  
no ip directed-broadcast  
shutdown  
isdn guard-timer 0 on-expiry accept
```

```
!  
no ip http server  
ip classless  
!  
!  
line con 0  
transport input none  
stopbits 1  
line vty 0 4  
!  
end
```

RouterC#

Switch show runs (truncated)

Top 2950

```
2950#show run  
Building configuration...
```

Current configuration:

```
!  
version 12.0  
no service pad  
service timestamps debug uptime  
service timestamps log uptime  
no service password-encryption  
!  
hostname Top2950  
!  
ip subnet-zero  
!  
interface FastEthernet0/1  
switchport access vlan 2  
!
```



```
interface FastEthernet0/2
switchport mode trunk
!
interface FastEthernet0/3
```

====

```
2950#show run
```

Building configuration...

Current configuration:

```
!
version 12.0
no service pad
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Bottom2950
!
ip subnet-zero
!
interface FastEthernet0/1
switchport access vlan 2
!
interface FastEthernet0/2
switchport mode trunk
!
interface FastEthernet0/3
switchport access vlan 2
```

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